

Claims

1. A modular electrical device comprising:

a base comprising at least one mounting location comprising first and second electrical base connectors;

5 a module comprising first and second electrical module connectors that are respectively adapted for mating with said first and second electrical base connectors at respective first and second connector interfaces;

first and second seals located respectively at said first and second connector interfaces, said first and second seals each comprising first and second sealing
10 elements that act respectively in first and second directions that are transverse relative to each other.

2. The modular electrical device as set forth in claim 1, wherein said first and second seals, each including first and second sealing elements, are defined as one-
15 piece constructions.

3. The modular electrical device as set forth in claim 1, wherein said first sealing element comprises a radially projecting lip, and wherein said second sealing element comprises an axially projecting lip.
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4. The modular electrical device as set forth in claim 1, wherein:
each of said first and second connector interfaces comprises: (i) laterally adjacent surfaces of said base connector and said module connector; and, (ii) axially adjacent surfaces of said base connector and said module connector;

25 said first sealing element is located between and sealingly engages said laterally adjacent surfaces; and,

said second sealing element is located between and sealingly engages said axially adjacent surfaces.

5. The modular electrical device as set forth in claim 2, wherein said first and second seals each comprise an L-shaped cross-section.

6. The modular electrical device as set forth in claim 1, wherein said first and second seals are each fixedly secured to either said base or said module.

7. The modular electrical device as set forth in claim 6, wherein both of said first and second seals are connected to said module.

8. The modular electrical device as set forth in claim 7, wherein said first and second module connectors comprise respective first and second female sockets, and wherein said first and second seals are located respectively in said first and second sockets.

9. The modular electrical device as set forth in claim 8, wherein said first and second seals are molded into said first and second sockets.

10. The modular electrical device as set forth in claim 8, wherein said first and second seals are defined together as a one-piece construction and are interconnected by a web.

11. The modular electrical device as set forth in claim 9, wherein said first and second sockets each define flow passages, and wherein said first and second seals are molded into said flow passages so as to be mechanically anchored in said first and second sockets, respectively.

12. The modular electrical device as set forth in claim 1, wherein said module comprises an outer housing and an inner housing nested within the outer housing, and wherein said inner housing is both mechanically and adhesively secured to said outer housing.

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13. The modular electrical device as set forth in claim 12, wherein one of said inner and outer housings comprises projecting tabs and the other of said inner and outer housings comprises recesses that receive said projecting tabs when said inner housing is nested within the outer housing.

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14. The modular electrical device as set forth in claim 12, wherein said outer housing comprises a continuously extending groove and said inner housing comprises a projecting wall that is received in said groove, wherein said projecting wall is adhesively secured in said groove.

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15. An electrical module comprising:

a housing;

first and second electrical connectors; and,

first and second seals located adjacent said first and second electrical connectors, wherein each of said first and second seals comprises first and second sealing lips that project outwardly in first and second directions that are transverse relative to each other.

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16. The electrical module as set forth in claim 15, wherein said first and second seals are each defined as a one-piece thermoplastic elastomeric construction.

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17. The electrical module as set forth in claim 15, wherein said first and second connectors are female socket connectors in which said first and second seals are respectively located.

18. The electrical module as set forth in claim 17, wherein said first sealing lip of each of said first and second seals projects axially, and wherein said second sealing lip of each of said first and second seals projects radially.

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19. The electrical module as set forth in claim 18, wherein said first and second seals each comprise an L-shaped cross-section.

20. The electrical module as set forth in claim 17, wherein said first and second seals are molded into said first and second sockets.

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21. The electrical module as set forth in claim 20, wherein said first and second seals are defined together as a one-piece construction and are interconnected by a web.

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22. The electrical module as set forth in claim 20, wherein said first and second sockets each define flow passages, and wherein said first and second seals are molded into said flow passages so as to be mechanically anchored in said first and second sockets, respectively.

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23. The electrical module as set forth in claim 15, wherein said housing comprises an outer housing and an inner housing nested within the outer housing.

24. The electrical module as set forth in claim 23, wherein said inner housing is both mechanically and adhesively secured to said outer housing.

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25. The electrical module as set forth in claim 24, wherein one of said inner and outer housings comprises projecting tabs and the other of said inner and outer housings comprises recesses that receive said projecting tabs when said inner housing is nested within the outer housing.

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